CHAPTER V

HAZARDOUS MATERIALS

V. HAZARDOUS MATERIALS

A. ISSUES AND OVERVIEW

1. Overview

Fairfax County hazardous materials (HAZMAT) concerns may be considered less significant as compared to other jurisdictions; the industrial base within the county is relatively "clean." Nevertheless, the county does have its share of problems. The main concerns are hazardous materials incidents involving spills, leaks, transportation accidents, ruptures, or other types of emergency discharges. Secondary is the use and disposal of hazardous materials in either daily household activities or by small quantity commercial generators. The final concern is the clean up and regulation of hazardous materials.

Although the news media is constantly reporting industrial and transportation related hazardous materials incidents, there is a general lack of awareness by the public of health and safety risks associated with the use, storage, and disposal of common household hazardous materials. Educating the public on the implications of these hazardous materials on peoples' lives remains a significant goal.

2. Hazardous Materials Incidents

a. Overview of 2004 Hazardous Materials Incidents

The Hazardous Materials and Investigative Services Section personnel respond to reported incidents and investigate complaints of potential and actual releases, many of a non-emergency nature. During CY 2004, Staff was involved with 552 complaints (125 more than the previous year). Two hundred eighty complaints were petroleum product releases (82 more than the year before), and 67 complaints were various types of other product releases (28 more than the previous year). Storm drains, creeks, and/or streams were reported to have been directly contaminated in 36 cases. This is a slight decrease from the previous year. (1)

b. Hazmat Response Team Information

The Fire and Rescue Department's Operations and/or Hazardous Materials and Investigative Services Section respond to all reported incidents of hazardous materials releases, spills, and discharges. The county has a well-equipped hazardous materials response team. The primary unit operates from Fire Station 34 in Oakton, and three satellite units are stationed at Fire Station 1 in McLean, Fire Station 11 in Alexandria area of Fairfax County, and Fire Station 26 in Springfield. These units are strategically positioned

to provide rapid response and adequate coverage throughout Fairfax County. Response personnel are trained and equipped to initiate product control and mitigation measures to prevent or minimize the adverse environmental impact and damage. All units are staffed 24 hours per day, seven days per week. (2)

The Hazardous Materials Response Team responded to more than 439 incidents in CY 2004 (a reduction of more than half of the responses the previous year). These incidents included the release of products into the air, water, and soil. In addition, there were 29 reports of improper disposal of various hazardous materials and solid waste in CY 2004 (1). The Team conducted regular training sessions, as well as practical exercises, with surrounding jurisdictions, as well as with state and federal agencies. (2)

In addition to the efforts of the Operations Division and Hazardous Materials Investigative Services Section personnel, the Fire and Rescue Department maintains a contract with a major commercial hazardous materials response company to provide additional support for large-scale incidents. The Fire and Rescue Department has stressed its commitment to protecting the environment and citizens through proper enforcement of the Fairfax County Fire Prevention Code and through rapid identification, containment, and cleanup of hazardous materials incidents. (2)

c. Hazmat aftermath from Hurricane Isabel

The Hazardous Materials Response Team presented an overview of the aftermath of Hurricane Isabel to the Fairfax Joint Local Emergency Planning Committee. After the hurricane, special hazardous materials disposal facilities were set up in the Belle View Community area and members of the team were present throughout the week following the hurricane. Natural gas leaks and fuel oil spills were the primary hazardous materials issues. Older homes had fuel oil located in basements or outside of the houses. Some tanks broke loose in the flood and were floating in the flood waters. (3)

3. Hazardous Materials in the Waste Stream

The disposal of household and small quantities of non-household hazardous materials into the waste stream continues to be a concern. Unlike hazardous materials incidents, the immediate impact is not as dangerous. However, the long-term impact can be just as severe. Hazardous materials in the waste stream are contaminating landfills. Sometimes hazardous materials are dumped illegally, which leads to stream and groundwater pollution and soil contamination. Household hazardous wastes are products used in and around the home that are flammable, corrosive, reactive, or toxic. These hazardous materials potentially can cause a safety problem if various household chemicals

become mixed when disposed of with the regular trash. By disposing of household hazardous wastes separately in the appropriate manner, these materials can be properly handled and packaged to minimize exposure to potentially harmful chemicals and decrease the likelihood that these chemicals will enter the environment.

a. Used Automotive Oil and Fluids

According to a recent study, more than 50% of motorists change their own oil. Some of the oil is disposed of properly at a used-oil recycling center. Millions of gallons of used motor oil are being disposed of in garbage cans, sewers, storm drains, and backyards – practices that can contaminate soil and local streams, rivers and bay. The U.S. Environmental Protection Agency (EPA) believes that the largest single source of oil pollution fouling our nation's waters come from do-it-yourselfers. (4)

As a part of its ongoing effort to educate all Americans on environmental responsibility, the EPA recently launched the **"You Dump it, You Drink It"** campaign, aimed at the Hispanic automotive repair and service industry and consumers. Despite the fact that about half of all automotive mechanics in the United States are Hispanic, little if any Spanish-language materials exits for the automotive repair industry and those consumers who change their own motor oil. EPA hopes to fill this void through a wide-scale distribution of these materials, which include posters, brochures and bumper stickers. These materials are available to download from the EAP Web site. (5)

The recycled used motor oil is used for many purposes. Reprocessing is the most common method of recycling used oil in the United States. Seventy-five percent of used oil is being reprocessed and marketed to asphalts plants, industrial boilers, utility boilers, steel mills, and others. Fourteen percent of used oil collected is turned over to re-refiners who return used oil to its original virgin oil state. Eleven percent of used motor oil collected is used in specially designed space heaters in automotive bays and municipal garages. (4)

Lynn Cooke, a service station owner in Washington, D.C., demonstrates quality control measures for used motor oil recycling to representatives from EPA, District of Columbia, and API.

(American Petroleum Institute Web site: www.recycleoil.org [4])

b. Dumping into Storm Drains

Storm drains carry stormwater runoff from streets (see the Water Resources chapter of this report). This water is not treated and goes directly into local streams. All streams in Fairfax County eventually flow into the Potomac River, which empties into the Chesapeake Bay. Anything dumped down a storm drain will follow the same path as the stormwater runoff. (6)

The cleaning up of animal wastes and the disposal of such wastes down storm drains, as well as the disposal of leaves down the storm drains, are attempts at doing a service that have the effect of introducing pollutants directly into county streams. There are deliberate disposals of chemicals, oils, and other items into the storm drains as "out-of-site, out-of-mind." In either situation, there is a misperception that the storm drains are part of the county sewage system and that the disposal of materials down these drains does not provide a direct impact to the environment.

4. Pipelines

The following was reported by the Fairfax Joint Local Emergency Planning Committee:

> "More than 3,000 companies operate some 1.9 million miles of natural gas and hazardous liquid pipelines in the United States. The pipeline network includes 302,000 miles of natural gas transmission pipelines operated by 1,220 firms, and 155,000 miles are hazardous liquid transmission pipelines operated by 220 outfits. In addition to transmission pipelines, 94 liquefied natural gas facilities operate in the United States."

Pipelines traverse Fairfax County carrying refined petroleum for two companies and natural gas for three companies. The Office of Pipeline Safety in the U.S. Department of Transportation regulates pipeline design and the construction, operation, and maintenance of pipelines to ensure safe transportation of hazardous liquids and natural gas. (7)

5. Rail Transport of Hazardous Materials

Chemicals and materials that are hazardous have regularly been transported by rail. Accidents or leaks have been, and continue to be, a cause for concern. Additional concerns have been introduced as a result of the September 11, 2001 terror attacks.

Potential future shipments of nuclear radioactive waste by rail (and by truck) will travel through parts of the Washington, D.C. metropolitan area. Should an accidental or intentional incident occur, the effects and impacts could extend beyond that initial area.

The July 18, 2001 CSX Train fire in a Baltimore, Maryland tunnel was an unintended incident involving a train car with hazardous materials and had wide-range, long-term consequences. Major sections of the downtown were closed, businesses were impacted, Orioles' games had to be rescheduled, and portions of a major street were closed for five weeks. (7)

Rail through Fairfax County is in the eastern and southern portions of the county and does not include tunnels. Residents are generally not located as close to the rails in Fairfax County as in other jurisdictions. However, some hazardous materials, alone or in combination, when released can affect areas up to miles from the initial site of the incident. It is conceivable that Fairfax County residents could be impacted with hazardous materials from a rail incident in another jurisdiction.

B. PROGRAMS, PROJECTS, AND ANALYSES

1. Fairfax Joint Local Emergency Planning Committee (FJLEPC)

Local Emergency Planning Committees are required by Section 301[c] of Title III of the Emergency Planning and Community Right-to-Know Act (EPCRA), a freestanding provision of the Superfund Amendments and Reauthorization Act of 1986 (SARA). The main thrust of SARA is to identify and clean up waste sites that are potentially toxic. Title III has two important provisions: 1) it provides for emergency response planning to cope with the accidental release of toxic chemicals into the air, land, and water; and 2) the community right-to-know provisions of Title III help to increase the public's knowledge and access to information on the presence of hazardous chemicals in their communities and releases of these chemicals into the environment. Under Title III, states are required to organize into planning areas and to establish local Emergency Planning Committees.

The FJLEPC is comprised of representatives of the City of Fairfax, the County of Fairfax, the Town of Herndon, and the Town of Vienna. Committee members include local government officials, police, fire and rescue officials, environmental and governmental planners, public health professionals, hospital officials, public utility and transportation officials, representatives of business organizations, professional societies, civic organizations, and the media. These representatives meet six times per year. The FJLEPC: (1) collects information about hazardous materials; (2) develops and updates, on an annual basis, the Hazardous Materials Emergency Response Plan (Plan); and (3) provides information to the public about the use, storage, and manufacture of hazardous materials. The Plan also contains notification procedures in the event of an incident, on site means of detecting incidents, evacuation routes, clean-up resources, and identification of parties responsible for the site. The Annual Plan

exercise was conducted at one of the participating business's location in October 2003. (2)

FJLEPC provides education and outreach to the public. Information is disseminated through public meetings, brochures, newsletters, and a Web site: http://www.lepcfairfax.org. The newsletter, which is mailed to civic and homeowner associations, focuses on emergency preparedness, disaster planning, and fireworks safety. FJLEPC produced a video about shelter in place. The video is available through any of the Fairfax County public libraries as well as online through the county's "video on demand" service at www.fairfaxcounty.gov/cable/channel16/vod.htm. (8) LEPC members are available to speak to businesses or citizens groups, as requested.

2. Railroad Transportation Plan

The CSX Transportation, Hazardous Material Systems, has a hazardous material emergency response plan. A written copy of that plan is on file with FJLEPC and the Fairfax County Fire & Rescue Hazmat Station 34. The Web site for CSX is: www.csx.com.

On the Web site, CSX reports a 50% increase in all of its hazardous material loads in the last decade. Of the 518,000 hazardous materials rail cars in 2004, CSX reports only nine released any portion of their contents as a result of derailments. (9) There was no mention if there were releases not resulting from derailments.

3. Storm Drain Stenciling Program

The Northern Virginia Soil and Water Conservation District (NVSWCD) has a Storm Drain Stenciling Program that encourages youth and community groups to educate the public about the dangers of dumping anything into storm drains. This is a two-part program that includes education and stenciling of the drains. The mandatory educational component must be completed prior to stenciling, and includes distributing flyers to all homes in the neighborhood regarding how to properly dispose of household and pet waste, yard debris, and used motor oil. Trained volunteers then stencil "Dumping Pollutes – Drains to Stream" on storm water inlets in pre-approved (Virginia Department of Transportation--VDOT) areas. This program has proven to be an effective, low-cost method of educating large segments of the population about water quality problems in our streams, lakes, rivers, and bay.

NVSWCD has approximately 160 pages on its Web site (www.fairfaxcounty.gov/nvswcd) and reports statistics for monthly visits to these pages. In its Biennial Report, NVSWCD listed the top 20 Web pages for the month of May in 2003 and 2004. The Storm Drain Stenciling page was

reported both times in the top 20 pages visited and saw an increase of visits in 2004 over 2003. (6)

Pictures of storm drain stenciling by local volunteers from NVSWCD Web site: www.fairfaxcounty.gov/nvswcd (6)

4. Household Hazardous Waste Program (HHW)

Fairfax County operates two HHW programs, one at the I-66 Transfer Station and the other at the I-95 Complex as a part of its recycling program for residents of Fairfax County. Hours of operation have expanded to allow residents better access to these disposal services. Information on the locations, hours of operations, types of wastes accepted, and how to dispose of the wastes is located on the county's Web site at www.fairfaxcounty.gov/dpwes/trash/disphhw.htm or by calling 703-324-5068. The expanded hours (10) are:

I-66 TRANSFER STATION
Thursday: 1:00 p.m. – 5:00 p.m.
Friday: 8:00 a.m. – Noon
Saturday: 8:00 a.m. – 4:00 p.m.
Sunday: 9:00 a.m. – 4:00 p.m.

I-95 LANDFILL
Thursday: 8:00 a.m. – Noon
Friday: 1:00 p.m. – 5:00 p.m.
Saturday: 8:00 a.m. – 4:00 p.m.

The HHW program has an overall community benefit, and therefore residents are not charged for disposal costs. The program receives its funding from the General Fund.

Household hazardous waste amounts will continue to increase as the population does. Capacity is available at the existing facilities to meet the county's needs well into the future.

In FY 2005, 22,866 users participated in the HHW program, disposing of 411,315 pounds of HHW, an 18.7% increase in usage and a 9.2% increase in the amount of HHW disposed compared with FY 2004. Additionally, the users disposed/recycled 5,790 gallons of antifreeze, 54,795 gallons of motor oil, 211,684 gallons of lead latex paint and acid batteries. Program details are provided in Table V-1 below (11, 12).

TABLE V-1
Fairfax County Household Hazardous Waste Program:
Record of Fiscal Year Disposal

Fiscal Year	Participation (# of users)	HHW (pounds)	Cost per household
FY 2005	22,866 households	411,315	$18.84
FY 2004	18,600 households	373,220	$22.92
FY 2003	16,140 households	359,840	$23.30
FY 2002	16,272 households	368,060	$20.97
FY 2001	15,312 households	356,275	$18.75
FY 2000	15,564 households	330,325	$18.33
FY 1999	15,222 households	396,019	$20.06
FY 1998	15,519 households	387,020	$24.28
FY 1997	13,219 households	397,266	$29.41
FY 1996	11,010 households	369,710	$34.58
FY 1995	11,066 households	246,138	$27.86
FY 1994	8,741 households	214,770	$41.57

Source: Fairfax County Department of Public Works and Environmental Services, Division of Waste Disposal and Resource Recovery

5. Commercial Hazardous Wastes

Fairfax County hosts several Business Hazardous Waste Clean-Up Days annually. Only Fairfax County businesses that are Conditionally Exempt Small Quantity Generators (CESQGs) may participate. A CESQG is a business that either generates less than 100 kilograms (about 220 pounds or 27 gallons) of hazardous waste per calendar month or produces less than one kilogram (about 2.2 pounds of ¼ of a gallon) of acutely hazardous waste per calendar month. For more information, call 703-324-5230, TTY 711, or view an online brochure in PDF format on the county's Web site: www.fairfaxcounty.gov/dpwes/trash/disphazcomm.htm . (13)

6. Recycling Rechargeable Batteries

Fairfax County collects batteries for recycling at the HHW facilities. Mercury and lithium batteries are the only non-rechargeable household batteries accepted by this program. Other batteries may be safely thrown away (10). The county also has started to collect Nickel-Cadmium (NiCad) and other rechargeable batteries at both HHW locations. Information, including hours of operations, can be found at: www.fairfaxcounty.gov/dpwes/trash/recyclingtrash.disphhw.htm .

Rechargeable batteries are commonly found in cordless power tools, cellular and cordless phones, laptop computers, camcorders, digital cameras, and remote

control toys. Rechargeable Battery Recycling Corporation (RBRC) is an organization funded by the recyclable battery manufacturers in the US for the purpose of collecting used rechargeable batteries for recycling. RBRC works with retail outlets that sell these types of batteries to collect the used batteries when customers bring them in to purchase new ones. There are a number of retail outlets in Fairfax County where rechargeable batteries are collected for recycling. (14)

RBRC recycles the following battery chemistries: NiCad, Nickel Metal Hydride (Ni-MH), Lithium Ion (Li-ion), and Small Sealed Lead (Pb) weighing less than two pounds. Battery Recycling seals can be found on the batteries. Additional information on what happens to the batteries, collections sites, and "handy tips for using, storing, and recharging your rechargeable batteries" can be found on the Web site: www.rbrc.org. (15)

The Fairfax County Solid Waste Management Plan (SWMP) discussed this issue in its chapter on "Special Wastes." It projected an increase of 109 tons per year of batteries by 2025. The SWMP recommended promoting pubic/private recycling programs to increase special wastes recycling, including NiCad battery recycling. (16) With the increasing appetite for cellular phones and cordless products using rechargeable batteries, this will be an important recycling issue in Fairfax County for the foreseeable future.

C. REPORTING ENVIRONMENTAL CONCERNS AND ISSUES

Environmental issues affect everyone living and working in the county. All environmental concerns and events negatively impacting the county should be reported. A list of contact information relating to environmental crimes is provided in Table V-2 below.

D. LEGISLATIVE UPDATE

No report of legislative or regulatory changes regarding hazardous materials issues in 2005 and implications to Fairfax County. (1)

Table V-2

HOW TO REPORT ENVIRONMENTAL CRIMES

Type of Incident	Phone Number
ANY ACTIVE RELEASE OF MATERIALS INTO THE ENVIRONMENT If the dumping of any substance into a stream, into a manhole, into a storm sewer, or onto the ground is witnessed, assumptions regarding the contents of the materials should not be made. 911 should be called immediately. When calling 911, be prepared to provide specific information regarding the location and nature of the incident. The local office of the U.S. Environmental Protection Agency (703-235-1113) can be called in addition to (but not instead of) 911.	**911**
HAZARDOUS MATERIALS-DANGEROUS If a suspected hazardous substance is being released, if lives are in danger, or if property is threatened, 911 should be called immediately. It is also appropriate to call 911 anytime an active release is witnessed.	**911**
HAZARDOUS MATERIALS-NO IMMEDIATE DANGER If a known discharge of hazardous materials has occurred in the past and no lives or property are in immediate danger; this must be reported to the Fairfax County Fire and Rescue Department's Hazardous Materials and Investigative Services Section at this number (includes Towns of Clifton, Herndon, and Vienna). If there is any question about whether a release may still be active or whether there may be any immediate danger, 911 should be called.	During working hours, call: **703-246-4386** After hours, call: **703-691-2131**
RELEASE OF ANY MATERIAL INTO THE ENVIRONMENT Any release of materials into the environment, whether hazardous or not, should be reported to the Northern Regional Office of the Virginia Department of Environmental Quality at the above number. If the release is an active one, call 911.	**703-583-3800**

Table V-2 (continued)

HOW TO REPORT ENVIRONMENTAL CRIMES

Type of Incident	Phone Number
EROSION AND SEDIMENTATION If the illegal removal of trees, the illegal clearing of land, and/or the illegal dumping of fill is suspected, contact Fairfax County's Code Enforcement Division at this number. This number should also be contacted if siltation and other harmful effects of construction activity are occurring or observed on neighboring lands and waterways. All calls received during non-working hours will be responded to during the next business day.	**703-324-1937**
HEALTH HAZARDS In addition to the above contacts, if a health hazard is suspected, contact the Environmental Health Administration at this number. The Health Department's Community Health and Safety Section (703-246-2300) can also be called. Asbestos-specific releases should also be reported to the Health Department.	**703-246-2205**

E. RECOMMENDATIONS

1. EQAC continues to recommend an aggressive public education campaign on how to properly dispose of household/residential, commercial, and industrial hazardous waste. Continuous partnering with the Northern Virginia Board of Realtors and solid waste haulers to distribute information to all new residents in the county is suggested. New residents would be anybody buying or renting a house, townhouse, or condominium. Waste removal companies could be asked to include an information letter with their mailings to their customers. Creative use of other organizations is also encouraged.

2. EQAC recognizes the County's ability to collect rechargeable batteries at the I-66 transfer station, the I-95 SW site, and special programs with the business community. Schools and other organizations should be encouraged to come up with creative initiatives to promote significant increases in recycling rechargeable batteries. Possible sites to house recycling drop off bins should be explored, such as outlying areas of parking lots. With the growing popularity and use of rechargeable battery products, especially cellular phones, EQAC recommends an aggressive program to promote recycling of NiCad rechargeable batteries.

3. EQAC recommends continuing to advertise and educate the public regarding the types of hazardous materials and other environmental situations citizens are requested to report, including whom they are to contact. Possible avenues are community association newsletters, press release stories to the media, and age appropriate material sent home through the schools. Avenues that are not connected with environmental information should be explored to reach people not drawn to environmental events.

REFERENCES

1. Fairfax County Fire & Rescue, Captain William Garrett, 23 September 2005 e-mail

2. Fairfax County Fire & Rescue, Chief Michael P. Neuhard, 17 June 2004 memo and Captain William Garrett, 29 September 2005 e-mail

3. Briefing presentation given to FJLEPC, Deputy Chief John Caussin, Fairfax County Fire & Rescue, 12 February 2004

4. American Petroleum Institute, *Used Motor Oil Collecting and Recycling,* www.recycleoil.org , viewed 16 August 2005

5. U.S. Environmental Protection Agency, Wastes-Used Oil Management Program, www.epa.gov/epaoswer/hazwaste/usedoil/ , viewed 16 August 2005

6. Northern Virginia Soil & Water Conservation District, *2002-2004 Biennial Report,* page 14 and Web site: www.fairfaxcounty.gov/nvswcd

7. Fairfax Joint Local Emergency Planning Committee, www.lepcfairfax.org

8. Fairfax County News Release, 24 June 2005, http://166.94.9.135/news/2005/05167.htm

9. CSX, www.csx.com , viewed 16 August 2005

10. Fairfax County Web site; viewed 1 September 2005 www.fairfaxcounty.gov/dpwes/trash/recyclingtrash.htm

11. Fairfax County Division of Solid Waste Disposal and Resource Recovery, Department of Public Works and Environmental Services, HHW Disposal Program, Cliff Taylor, 30 June 2004 memo

12. Fairfax County Division of Solid Waste Disposal and Resource Recovery, Linda Boone, 11 July 2005 e-mail

13. Fairfax County Government, Business Hazardous Waste, www.fairfaxcounty.gov/dpwes/trash/disphazcomm.htm , viewed 1 September 2005

14. Fairfax County Division of Solid Waste Collection and Recycling, Pamela F. Gratton, 7 October 2004 e-mail

15. Rechargeable Battery Recycling Corporation (RBRC) Web site viewed 23 September 2004. www.rbrc.org

16. Solid Waste Management Task Force Plan, 2005, last modified 27 August 2004, as viewed on-line 23 September 2004; www.fairfaxcounty.gov/dpwes

17. Previous EQAC authors of this chapter and material